A graphical user interface on European cause of death

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Context and Goals

We already know that the cause of deaths for people of different genders, ages, and even regions may vary greatly. However, this thought remains fuzzy to public. Moreover, for people who works in hospital or pharmacy companies, they would like to have a closer look at these data in order to adjust their research or health plan.

The **goal** of this project is to help OMS, doctors, pharmacy companies **better understand** the evolution of cause of deaths during a decade, especially the causes related to a certain disease, and then to **ameliorate or validate** some health plans, drug research, and to improve the quality of life for public even further.

Methods and Materials

Materials

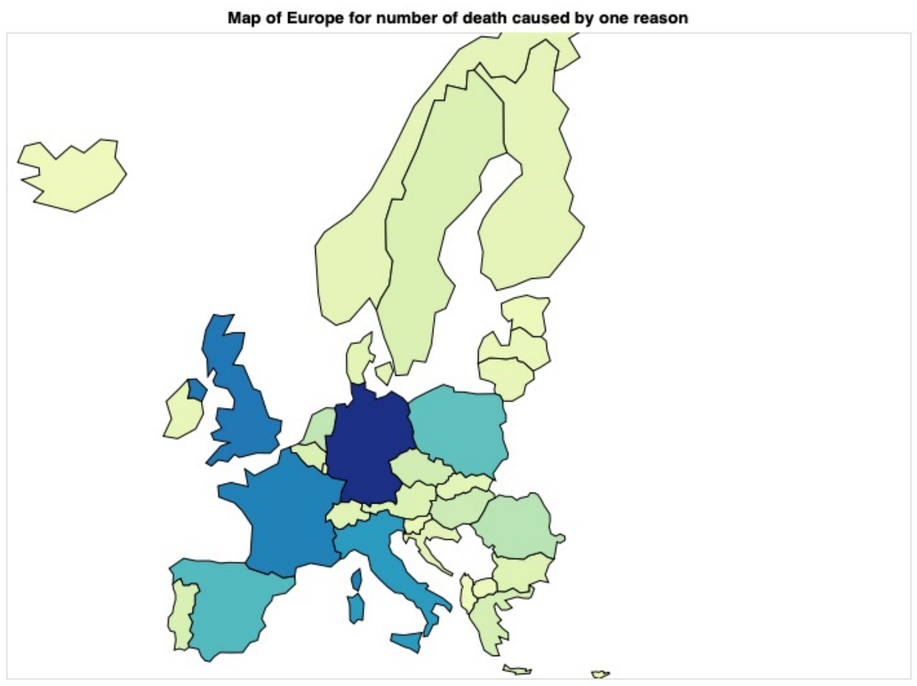
- The **first** dataset *CauseOfDeath.csv* gives the total number of deaths by disease, gender, age, and year from **2001 to 2010** in Europe. It allows us to have an overview of the distribution of cause of death in European countries and to have a finer study as a function of age, gender etc.
- The **second** dataset *countries_codes.xlsx* contains country name and its corresponding code for over 200 countries. It aims to visualise each country on the map for Altair.

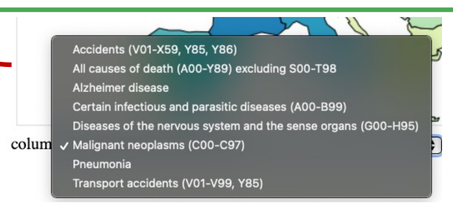
Methods

We use **Altair** to achieve the visualisation of dataset. It is a declarative statistical visualization library for Python, based on Vega and Vega-Lite.

Demonstration

1. Overview of number of deaths in Europe

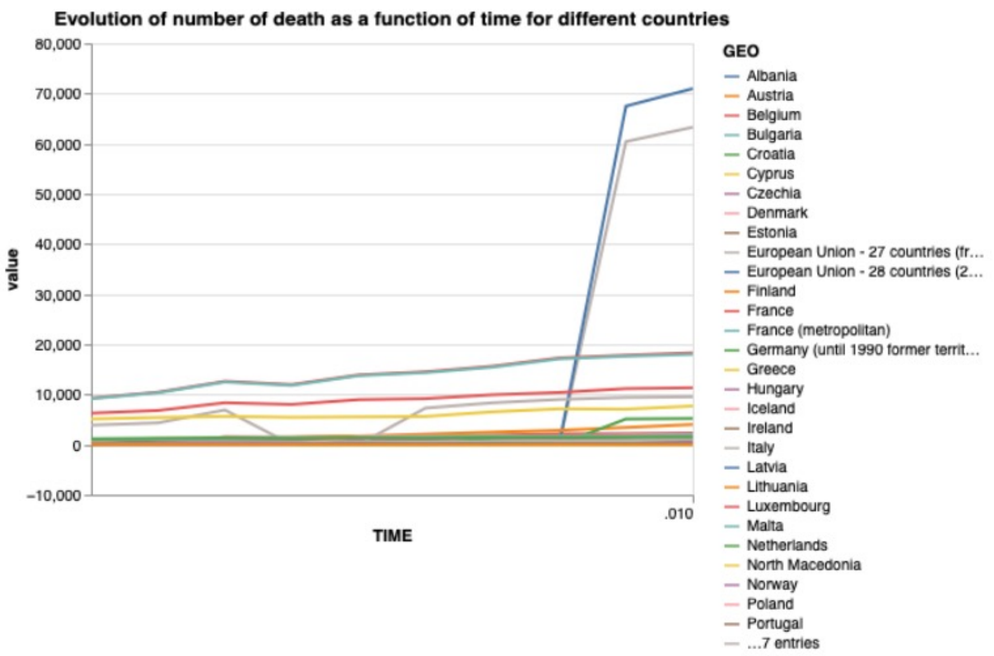




- **Select the cause of death in a drop-down list**

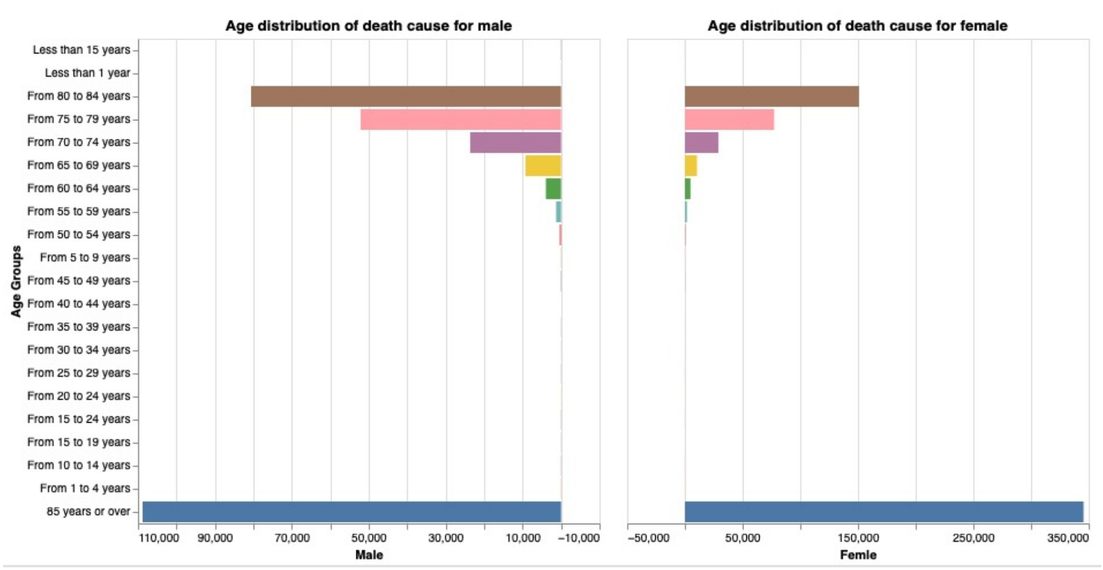
The **first** map shows **the total number of deaths** for the European countries on the cause we selected. It allows us to have a quick look at the difference of number of deaths between countries: the colder the color is, the more number of death is caused by this cause in the country.

2. Evolution of number of deaths



The **second** graph shows the **evolution of number of deaths** due to one cause of death from 2001 to 2010. This graph helps us better understand the evolution of disease in each country and may improve the health plan for different countries.

3. Comparison of repartiton between male and female



Our **last** graph allows us to do a **comparison for different genders**. On the left we have the age repartition of number of death cause by one disease for male and on the right, the age repartition of number of death for female is shown. In this example, we can see clearly the number of deaths caused by Alzheimer disease for female is much bigger than this for male, which can remind hospital and other companies to pay more attention to female patient with Alzheimer.